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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,397	11/19/2003	Steve J. Lofland	42P15277	9724

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EXAMINER

LEO, LEONARD R

ART UNIT PAPER NUMBER

3753

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

Office Action Summary	Application No. 10/718,397	Applicant(s) LOFLAND ET AL.	
	Examiner Leonard R. Leo	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 7-8 and 16-17 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Vandergrift.

Claims 7 and 16 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Coe (Figures 5-7).

Claims 1-3, 7, 10-12, 16 and 18 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Tomchak.

Claims 1-3, 6-7, 9-12, 15-16 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawakatsu et al. Regarding claims 6, 9, 15 and 18, Figure 10 of Kawakatsu et al discloses a channel wall having a tapered angle greater than 5 degrees.

Claims 7, 9, 16 and 18 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Rhodes et al (column 4, lines 17-21).

Claims 1-3, 7, 10-12, 16, 19-21, 25-27 and 30-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Mok et al (Figures 2 and 5-7). Regarding claims 25-26 and 30-31, Mok et al (Figure 4 and paragraph 22) discloses fans 36, 38 cooling heat dissipation device 32 coupled via hoses (not shown) to cold plate 4 with internal pump 11.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 8, 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomchak in view of Vandergrift.

Tomchak discloses all the claimed limitations except primarily non-linear flow paths.

Vandergrift discloses a heat exchanger comprising a first member 1 and second member 2, each having a set of channel walls 3, 4 and 5-7, respectively to define a plurality of non-linear flow paths for the purpose of minimizing pressure drop.

Since Tomchak and Vandergrift are both from the same field of endeavor and/or analogous art, the purpose disclosed by Vandergrift would have been recognized in the pertinent art of Tomchak.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Tomchak a plurality of non-linear flow paths for the purpose of minimizing pressure drop as recognized by Vandergrift.

Claims 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomchak in view of Coe.

The device of Tomchak lacks first and second index features.

Coe (Figures 5-7) discloses a heat exchanger comprising a first member 41 and second member 42, each having a set of channel walls 45-47 and 51-52, respectively to define a plurality

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of flow paths and index features 43, 44 and 53-55, respectively for the purpose of providing strength and facilitating assembly.

Since Tomchak and Coe are both from the same field of endeavor and/or analogous art, the purpose disclosed by Coe would have been recognized in the pertinent art of Tomchak.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Tomchak index features for the purpose of providing strength and facilitating assembly as recognized by Coe.

Claims 4, 8, 13, 17, 22 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mok et al in view of Vandergrift.

Mok et al discloses all the claimed limitations except primarily non-linear flow paths.

Vandergrift discloses a heat exchanger comprising a first member 1 and second member 2, each having a set of channel walls 3, 4 and 5-7, respectively to define a plurality of non-linear flow paths for the purpose of minimizing pressure drop.

Since Mok et al and Vandergrift are both from the same field of endeavor and/or analogous art, the purpose disclosed by Vandergrift would have been recognized in the pertinent art of Mok et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Mok et al a plurality of non-linear flow paths for the purpose of minimizing pressure drop as recognized by Vandergrift.

Claims 5, 14 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mok et al in view of Coe, as applied above.

Claims 24 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mok et al in view of Fraas et al.

The device of Mok et al lacks tapered channel walls.

Fraas et al discloses tapered fins/ribs make more efficient use of material than fins/ribs of uniform thickness.

Since Mok et al and Fraas et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Fraas et al would have been recognized in the pertinent art of Mok et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Mok et al tapered fins/ribs for the purpose of making efficient use of material as recognized by Fraas et al.

Conclusion

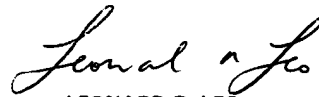
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard R. Leo whose telephone number is (571) 272-4916. The examiner can normally be reached on Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on (571) 272-4930. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


LEONARD R. LEO
PRIMARY EXAMINER
ART UNIT 3753

May 25, 2005